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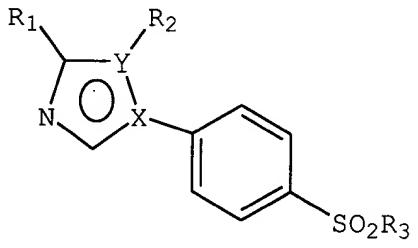
6/26/03

Clean Copy of Amended Claims:

1. (Amended) A compound of formula I:



I

wherein:

one of X or Y represents N and the other represents C;

R_1 represents hydrogen, methyl, halogen, cyano, nitro, -CHO, $-COCH_3$ or $-COOR_4$;

R_2 represents aryl or heteroaryl unsubstituted or substituted with one or more groups independently selected from halogen, C_{1-8} alkyl, C_{1-8} haloalkyl, R_4OC_{0-8} alkyl, R_4SC_{0-8} alkyl, cyano, nitro, $-NR_4R_6$, $-NR_4SO_2R_5$, $-SOR_5$, $-SO_2R_5$, $-SO_2NR_4R_6$, or $-CONR_4R_6$;

R_3 represents C_{1-8} alkyl, C_{1-8} haloalkyl or $-NR_4R_6$;

R_4 represents hydrogen, C_{1-8} alkyl, or arylC_{0-8} alkyl (where the aryl group can be unsubstituted or substituted with one or more groups selected from C_{1-8} alkyl, halogen, C_{1-8} haloalkyl, cyano, nitro, R_7OC_{0-8} alkyl, R_7SC_{0-8} alkyl, $-NR_7R_8$, $-NR_7COR_5$, $-COR_7$ or $-COOR_7$);

R_5 represents C_{1-8} alkyl or C_{1-8} haloalkyl;

R_6 represents hydrogen, C_{1-8} alkyl, arylC_{1-8} alkyl (where the aryl group can be unsubstituted or substituted with one or more groups selected from C_{1-8} alkyl, halogen, C_{1-8} haloalkyl, cyano, nitro,

R_7OC_{0-8} alkyl, R_7SC_{0-8} alkyl, $-NR_7R_8$, $-NR_7COR_5$, $-COR_7$ or $-COOR_7$), $-COR_8$ or $-COOR_8$;

R_7 represents hydrogen, C_{1-8} alkyl or benzyl;

R_8 represents C_{1-8} alkyl or C_{1-8} haloalkyl;

aryl in the above definitions represents phenyl or naphthyl; and

heteroaryl in the above definitions represents pyridine, pyrazine, pyrimidine or pyridazine, which can be optionally fused to a benzene ring;

or a salt, solvate or prodrug thereof.

A1 cont

4. (Amended) A compound according to claim 1 wherein R_2 represents phenyl or pyridine unsubstituted or substituted with one or more groups independently selected from halogen, C_{1-8} alkyl, C_{1-8} haloalkyl, R_4OC_{0-8} alkyl, R_4SC_{0-8} alkyl, cyano, nitro, $-NR_4R_6$, $-NR_4SO_2R_5$, $-SOR_5$, $-SO_2R_5$, $-SO_2NR_4R_6$, or $-CONR_4R_6$.

A2

10. (Amended) A compound according to claim 9 wherein R_2 represents phenyl or pyridine unsubstituted or substituted with one or more groups independently selected from halogen, C_{1-8} alkyl, C_{1-8} haloalkyl, R_4OC_{0-8} alkyl, R_4SC_{0-8} alkyl, cyano, nitro, $-NR_4R_6$, $-NR_4SO_2R_5$, $-SOR_5$, $-SO_2R_5$, $-SO_2NR_4R_6$, or $-CONR_4R_6$.

A3

11. (Amended) A compound according to claim 1 selected from:

5-(4-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;

5-(4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;

5-(2,4-difluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;

1-(4-methylsulfonylphenyl)-5-phenylimidazole;

5-(3,4-dichlorophenyl)-1-(4-methylsulfonylphenyl)imidazole;

5-(4-methoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;

5-(3-fluoro-4-methoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;

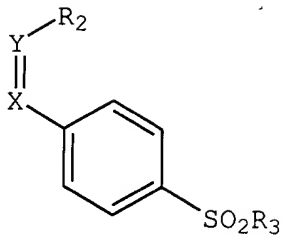
5-(3-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(3-fluoro-4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(2-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
1-(4-methylsulfonylphenyl)-5-(4-trifluoromethoxyphenyl)imidazole;
5-(6-methyl-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(2-fluoro-4-methoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(3-chloro-4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(3-methoxy-4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(4-chlorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(6-chloro-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(2,6-dichloro-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(2-chloro-6-methoxy-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(5,6-dichloro-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
1-(4-methylsulfonylphenyl)-5-(4-propoxyphenyl)imidazole;
5-(3,5-diethoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(4-ethoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
1-(4-methylsulfonylphenyl)-5-(4-nitrophenyl)imidazole;
5-(4-methylsulfanylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(4-ethylsulfanylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(4-dimethylaminophenyl)-1-(4-methylsulfonylphenyl)imidazole;
1-(4-fluorophenyl)-5-(4-methylsulfonylphenyl)imidazole;
5-(4-fluorophenyl)-4-methyl-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(4-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(2,4-difluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-1-(4-methylsulfonylphenyl)-5-phenylimidazole;
4-chloro-5-(3,4-dichlorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(4-methoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;

4-chloro-5-(3-fluoro-4-methoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(3-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(3-fluoro-4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(2-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-1-(4-methylsulfonylphenyl)-5-(4-trifluoromethoxyphenyl)imidazole;
4-chloro-5-(6-methyl-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(2-fluoro-4-methoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(3-chloro-4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(3-methoxy-4-methylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(4-chlorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(6-chloro-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(2,6-dichloro-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(2-chloro-6-methoxy-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(5,6-dichloro-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-1-(4-methylsulfonylphenyl)-5-(4-propoxyphenyl)imidazole;
4-chloro-5-(3,5-diethoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(4-ethoxyphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-1-(4-methylsulfonylphenyl)-5-(4-nitrophenyl)imidazole;

4-chloro-5-(4-methylsulfanylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(4-ethylsulfanylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(6-ethoxy-3-pyridyl)-1-(4-methylsulfonlyphenyl)imidazole;
4-bromo-5-(4-fluorophenyl)-1-(4-methylsulfonylphenyl)imidazole;
1-(4-fluorophenyl)-2-methyl-5-(4-methylsulfonylphenyl)imidazole;
2-chloro-1-(4-fluorophenyl)-5-(4-methylsulfonylphenyl)imidazole;
1-(4-fluorophenyl)-5-(4-methylsulfonylphenyl)imidazol-2-carboxaldehyde;
methyl 1-(4-fluorophenyl)-5-(4-methylsulfonylphenyl)imidazol-2-carboxylate;
2-bromo-1-(4-fluorophenyl)-5-(4-methylsulfonylphenyl)imidazole;
1-(4-fluorophenyl)-5-(4-methylsulfonylphenyl)imidazol-2-carbonitrile;
2-chloro-5-(4-methylsulfonlyphenyl)-1-phenylimidazole;
2-chloro-1-(4-methylphenyl)-5-(4-methylsulfonylphenyl)imidazole;
4-[4-chloro-5-(4-fluorophenyl)imidazol-1-yl]benzenesulfonamide;
4-(4-chloro-5-phenylimidazol-1-yl)benzenesulfonamide;
4-[4-chloro-5-(3,4-dichlorophenyl)imidazol-1-yl]benzenesulfonamide;
4-[4-chloro-5-(4-methylphenyl)imidazol-1-yl]benzenesulfonamide;
4-[4-chloro-5-(4-ethoxyphenyl)imidazol-1-yl]benzenesulfonamide;
4-[4-chloro-5-(3-fluoro-4-methoxyphenyl)imidazol-1-yl]benzenesulfonamide;
4-[4-chloro-5-(6-chloro-3-pyridyl)imidazol-1-yl]benzenesulfonamide;
4-[5-(4-fluorophenyl)imidazol-1-yl]benzenesulfonamide;
5-(4-aminophenyl)-4-chloro-1-(4-methylsulfonylphenyl)imidazole;
5-(6-ethoxy-3-pyridyl)-1-(4-methylsulfonylphenyl)imidazole;

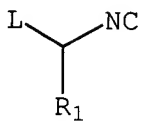
4-chloro-5-(4-dimethylaminophenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(3-chloro-4-dimethylaminophenyl)-1-(4-methylsulfonylphenyl)imidazole;
4-chloro-5-(3-chloro-4-dimethylaminophenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(4-acetylaminophenyl)-4-chloro-1-(4-methylsulfonylphenyl)imidazole;
5-(4-ethylsulfinylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
5-(4-ethylsulfonylphenyl)-1-(4-methylsulfonylphenyl)imidazole;
a salt thereof;
a solvate thereof; and
a prodrug thereof.

12. (Amended) A process for preparing a compound of formula I according to claim 1 which comprises:
(a) when in a compound of formula I R_1 represents hydrogen or methyl, reacting an imine of formula II



II

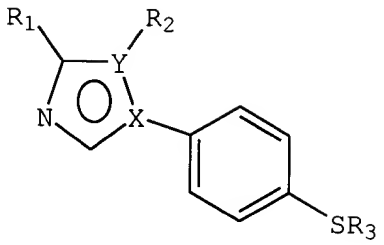
wherein X, Y, R_2 and R_3 are as defined in claim 1, with an isocyanide of formula III



III

wherein R_1 represents hydrogen or methyl and L represents a leaving group; or

(b) when in a compound of formula I R_3 represents C_{1-8} alkyl or C_{1-8} haloalkyl, oxidizing a thioether of formula VIII,

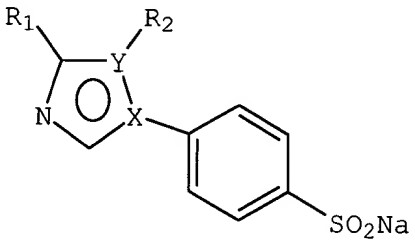


VIII

wherein R_3 represents C_{1-8} alkyl or C_{1-8} haloalkyl and X, Y, R_1 and R_2 are as defined in claim 1, with an oxidizing agent; or

(c) when in a compound of formula I R_3 represents $-NH_2$, reacting a compound of formula IX

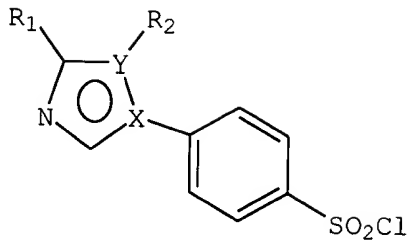
a3 cont



IX

wherein X, Y, R_1 and R_2 are as defined in claim 1, with hydroxylamine-*O*-sulfonic acid; or

(d) when in a compound of formula I R_3 represents $-NR_4R_6$, reacting a compound of formula XI



XI

wherein X, Y, R_1 and R_2 are as defined in claim 1, with an amine of formula HNR_4R_6; or

(e) when in a compound of formula I R_1 represents halogen and X represents N, reacting a compound of formula I wherein R_1 represents hydrogen with a halogenating agent; or

(f) when in a compound of formula I R_1 represents halogen and Y represents N, reacting a compound of formula I wherein R_1 represents hydrogen with a strong base and a halogenating agent; or

(g) converting a compound of formula I into another compound of formula I.

Added Claims:

23. A process for preparing a salt of a compound of formula I according to claim 1 which comprises reacting a compound of formula I with an acid to give the corresponding acid addition salt.

24. A method of treating or preventing a disease mediated by cyclooxygenase in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount

of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt, solvate or prodrug thereof.

25. A method in accordance with claim 24, wherein said mammal is a human.

26. A method of treating or preventing a disease mediated by cyclooxygenase-2 in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt, solvate or prodrug thereof.

27. A method in accordance with claim 26, wherein said mammal is a human.

cont

28. A method of treating inflammation, pain or fever in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt, solvate or prodrug thereof.

29. A method in accordance with claim 28, wherein said mammal is a human.

30. A method for inhibiting prostanoid-induced smooth muscle contraction in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt, solvate or prodrug thereof.

31. A method in accordance with claim 30, wherein said mammal is a human.

32. A method of treating or preventing dysmenorrhea, preterm labor, asthma or bronchitis in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt, solvate or prodrug thereof.

33. A method in accordance with claim 32, wherein said mammal is a human.

34. A method of treating or preventing cancer in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of formula I according to claim 1 or a pharmaceutically acceptable salt, solvate or prodrug thereof.

35. A method in accordance with claim 33, wherein said mammal is a human.

36. A method according to claim 34 or 35, wherein said cancer is a gastrointestinal cancer.

37. A method according to claim 36, wherein said cancer is colon cancer.

38. A method of treating or preventing cerebral infarction, epilepsy, or a neurodegenerative disease in a mammal in need thereof, which comprises administering to said mammal a